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lain down during the presence of the ice. Afterwards a decreased volume and a rising land will account for the rest of the work done in postglacial times. In other words, the upper terrace plain is due to a glacial accident in the river's history, and the upper escarpment was formed as the river cut down toward base-level after the land rose when relieved from the weight of ice. The later terraces formed as the river sank its channel deeper into the glacial waste, each terrace plain representing the temporary level of the stream, and each escarpment showing intermittently rising land. (Proceeds. Boston, Soc. Nat. Hist., Vol. XXVI, 1894.)

A fossil mandible in the Museum at Brisbane, Queensland, is referred by Mr. De Vis to *Zygomaturus*. In commenting on the supposed identity of this genus with *Nototherium* Owen, the author says that this mandible shows the two genera to be distinct and that *Zygomaturus*, and its three allies, *Diprotodon*, *Nototherium*, and *Euowenia*, form a natural family of the phascolomine section of the marsupials. (Proc. Roy. Soc. Queensland, Vol. XI, 1895.)

BOTANY.¹

Progress of the Botanical Survey of Nebraska.—From data recently obtained the following statement is made of the progress of the Botanical Survey of Nebraska. From its beginning, several years ago, the Survey has been a private enterprise, supported and encouraged by the University of Nebraska, the State Board of Agriculture, and the State Horticultural Society. The immediate work is in the hands of the Botanical Seminar, an organization of graduates of the botanical department of the University of Nebraska. Through the energy of the members of the Seminar expeditions have been made from time to time to nearly all parts of the State, and in some cases these have been of extended duration. The first considerable publication was made in 1890 when H. J. Webber's "Catalogue of the Flora of Nebraska" appeared in the Report of the State Board of Agriculture. Reprints of this catalogue were issued under separate cover, and these have formed the basis of subsequent work and publication. This catalogue, unlike many local publications of its kind, was based upon

¹ Edited by Prof. C. E. Bessey, University of Nebraska, Lincoln, Nebraska.

actual specimens in the possession of the author, with a few exceptions where species were admitted on the authority of recent scientific publications.

In this catalogue 1,890 species were enumerated, almost equally divided between the flowerless and flowering plants. Important additions were made by members of the Seminar during the two years following the publication of the catalogue, and early in 1892, Mr. Webber published an "Appendix" to his first catalogue. This, with other additions published at the same time in a "Supplementary List," brought the whole number of species up to nearly 2,500 not quite equally divided between flowerless and flowering plants, the latter exceeding the former by about 150. A year later, 1893, in the "Report on Collections made in 1892" 162 species were added, and in the "Report for 1893" published in 1894, 184 additions were made, bringing the whole number of species (after making necessary corrections) up to about 2,820, again almost equally divided between flowerless and flowering plants. The collections made last year, now nearly worked up, will amount to about 220 or more species, so that the list of known species now approximates 3,050. The flowerless plants now surpass the phanerogams, there being fully 1,600 of the former, to about 1,450 of the latter. From this time forward the ascendancy of the lower plants is assured, since it is quite certain that by far the larger part of the flowering plants have already been catalogued.

Throughout the work, the original rule of basing all additions upon actual specimens has been adhered to, and in all the later work every specimen has been deposited in the Herbarium of the Survey. Some of the earlier collections are still in the private herbaria of members of the Seminar, but these will doubtless eventually be deposited in the Survey Herbarium also.

Along special lines a more particular study of the distribution of species has been made; thus the distribution of the woody plants has been mapped for each species, the whole including a series of small maps on which the area covered by each species is indicated by red-ink shading. In addition the data so obtained have been published in the bulletins of the Experiment Station (No. 18, 1891), the Annual Report of the Nebraska State Horticultural Society (1892), and the Annual Report of the Nebraska State Board of Agriculture (1894). Sixty-four trees and seventy-seven shrubs are now known to occur in the State, and their distribution is already quite well known.

The final reports of the Survey are to take the form of a systematic descriptive work, in which every species is to be fully described, accom-

panied by illustrations of all the genera. This publication is to bear the name "Flora of Nebraska" and will be issued in "parts" as the material is ready for publication. It is estimated that twenty-five parts of about fifty pages each, will be required to complete this work. In August of last year Parts I and II were issued. They cover the classes Schizophyceæ, Chlorophyceæ, Coleochæteæ, Rhodophyceæ and Charophyceæ, and are illustrated by thirty-six plates. Part XXII, the Calycifloræ, is nearly ready for the press, and will probably appear about the middle of the year. The plates, of which there will be eleven, are already made, and will illustrate the more difficult species and genera.

CHARLES E. BESSEY.

Pharmaceutical Botany.—A few months ago Professor Sayre's book "A Manual of Organic Materia Medica and Pharmacognosy" was issued by Blakiston & Co. of Philadelphia. An examination of the work, and some use of it in the laboratory show that it is well adapted to the use for which it was designed. The introductory chapters, devoted to an outline of Morphological and Structural Botany, will enable the student without other preparation to take up the work of the body of the book. The sequence of pharmaceutical products is strictly botanical, beginning with those which are derived from the Ranunculaceæ, and ending with Irish Moss from one of the Red algæ. The descriptions are good, and there are numerous illustrations, many of which are very good, while even the cruder ones will prove useful to the young pharmacist. Aside from its high value in pharmaceutical botany, it will be a useful reference book in any botanical laboratory.

Professor Bastin has recently added another useful book "Laboratory Exercises in Botany" (published by W. B. Saunders, Phila.) to his well known series. Although not distinctly so stated, it is especially suited to the wants of students in Medical Colleges, and those who are preparing to take up Pharmaceutical Botany, and for these it will be of much service. The numerous illustrations, while often not artistic, have the merit of making their meaning plain. The two books might very profitably be used together.